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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/805,813	03/22/2004	Yi Feng Zheng	9115	9960

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EXAMINER	
HAQ, SHAFIQUL	
ART UNIT	**PAPER NUMBER**
1641	

DATE MAILED: 09/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/805,813	ZHENG ET AL.	
	Examiner	Art Unit	
	Shafiqul Haq	1641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 August 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6 and 8-60* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6 and 8-60* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Applicants' responses and amendments filed August 4, 2005 is acknowledged and entered.
2. Claim 7 is cancelled.
3. Claims 1-6 and 7-60 are pending and under active prosecution.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-6, 8-19, 21, 23-28, 30, 32-35, 40-43, 48-52 and 58-59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang et al. (US 2002/0090661 A1).

Wang et al disclose novel tracers for detection of amphetamine derivatives.

The haptens and hapten conjugates (claims 1, 3, 5 and fig.5 and fig.7) of the reference are equivalent to the haptens and conjugate the present application. Compare linking groups of the reference hapten conjugate (fig.5 and fig.7) (-X-R-Z-*) wherein X= O, S, NH; R=-(CH2)n-; Z=carboxyls and *= with the linking groups (-W-L-Z) of hapten conjugates (claims1, 8,13, 14 and

23) of the instant invention wherein W= O,S,NH; L=-(CH2)t-X-(CH2)v-Y- wherein X=CO or SO2, Y=bond, v=0, t=1-6;; and Z=label. Note that in reference conjugate, when a label or a proteins (represented by "*" here) is conjugated with carboxyls (represented by Z), it will leave a carbonyl bond on the conjugate.

The compounds of claim 23 wherein t"'=1, v"'=0 and y"'=bond, is also equivalent to the reference compounds as discussed above.

The reference hapten is a chain homolog of the hapten of the present invention differing only by having an extra (when n=2 in fig.5) methylene group attached to benzene ring (i.e controlled versus non-controlled amphetamine) and they are expected to have similar properties. The claimed compounds are so closely related structurally to the homologous compounds of the reference as to be structurally obvious therefore in the absence of any unobviousness or unexpected properties. Applicants should note that a generic teaching is grounds for 35 USC § 103 (a) obviousness type of rejection. In looking at the instant claimed compounds as a whole, the claimed compounds would have been suggested to one skilled in the art unless unobvious or unexpected results can be shown.

Wang et al. also disclose competitive immunoassay method (see claims 7-10) in which labeled tracer (Wang's conjugate) bound to solid phase-immobilized antibody (amphetamine specific antibody) is displaced by amphetamine in a sample and the displaced labeled tracer is detected which is directly proportional to amphetamine in the sample.

Therefore, given the above fact that the two haptens are chain homologs and are very similar, one would obviously expect them to show similar properties as hapten or as a tracer and competitive immunoassay methods would be an obvious choice for the detection of amphetamine or methamphetamine (as disclosed by Wang) in a sample.

The features of the dependent claims are either specifically described by the references (e.g. for polyamino acid and enzyme or claims 11 and 17, see claim 5 of reference wherein label is selected from an enzyme or a chemiluminescent or bioluminescent biomolecule) or constitute obvious variations such as stereoisomeric mixture of haptens. Note that claim 8 recites "51% of one stereoisomer over the other". This mixture is so close to 50% that one would obviously consider it to be a racemic mixture. Also note that, in claims 1, 13, 14 and 23, either sterioisomer of the hapten can be used and there is no suggestion or preference for a specific isomer and therefore, one would consider this mixture as a mixture of isomers (either racemic or partially racemic) naturally generated during the synthesis of a particular hapten derivatives. Moreover, claim 12 recites "stereoisomeric mixture comprises as least 90% of one stereoisomer form over the other" but, the preference for a specific stereoisomer for making hapten-conjugate have not been described as critical to the practice of the invention.

The packaging of components in kit form (claims 58-59) is a well-known obvious expedient for ease and convenience in assay performance (e.g. Heiman) and once a method has been established, one skilled in the art

would clearly consider compiling in a kit format and change/modify different components of the kit to best suit the assay.

6. Claims 20, 22, 29, 31, 36-39, 44-47, 53-57 and 60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang et al. (US 2002/0090661 A1) in view of Heiman et al. (US 5,262,333)

Wang et al disclose haptens and hapten conjugates (claims 1, 3, 5 and fig.5 and fig.7) for detection of amphetamine and methamphetamine in samples and as discussed in paragraph 5 above, the haptens and hapten conjugates are equivalent to the haptens and conjugate the present application. Wang et al. also disclose competitive immunoassay method (see claims 7-10) in which labeled tracer (Wang's conjugate) bound to solid phase-immobilized antibody (amphetamine specific antibody) is displaced by amphetamine in a sample and the displaced labeled tracer is detected which is directly proportional to amphetamine in the sample.

Wang et al., however, fail to disclose antibodies against the hapten conjugates and use of the antibody in competitive immunoassay methods as claimed in the present application.

Heiman et al disclose a method and reagents for detection of amphetamine and methamphetamine. Although not anticipated, the linkers of the hapten conjugates disclosed by Heiman et al (see column 9, formula 1 and 3; column 16 formula 7; considering R=linking group or heteroatoms, and having a total of 1-6 carbon and Z, Q = as defined)) are similar to the linkers

of compounds of the instant invention.

Heiman et al. also disclose conjugate of the hapten for raising antibody (column 16, lines 26-31; column 38-40, examples 3, 4 and 5) and for using as a tracer (column 9, formula 3). Tracer (labeled hapten) and antibody against the hapten are used in competitive immunoassay methods for detection and quantitative determination of amphetamine derivatives (column 19, lines 1-15; column 21, lines 15-35). Heiman et al. further disclose reagent kit assembly for detection of amphetamine and methamphetamine in test samples such as biological fluids (claims 11-17).

Therefore, given the fact that derivatives of amphetamine and methamphetamine conjugates are common and known in the art as a tracer and as an immunogen in various competitive immunoassay (Heiman and Wang), it would have been obvious at the time of the invention to a person of ordinary skill in the art to obtain antibody against a hapten once a hapten conjugate is known (Wang) and to use the antibody in a competitive immunoassay (Wang and Heiman), with the expectation of obtaining a similarly useful method for detection of amphetamine and methamphetamine in a sample.

The packaging of components in kit form (claim 60) is a well-known obvious expedient for ease and convenience in assay performance (e.g. Heiman) and once a method has been established, one skilled in the art would clearly consider compiling in a kit format and change/modify different components of the kit to best suit the assay.

7. Claims 20, 22, 29, 31, 36-39, 44-47, 53-57 and 60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang et al. (US 2002/0090661 A1) in view of Hui et al. (US 2003/0175995 A1)

Wang et al disclose haptens and hapten conjugates (claims 1, 3, 5 and fig.5 and fig.7) for detection of amphetamine and methamphetamine in samples and as discussed in paragraph 5 above, the haptens and hapten conjugates are equivalent to the haptens and conjugate the present application. Wang et al. also disclose competitive immunoassay method (see claims 7-10) in which labeled tracer (Wang's conjugate) bound to solid phase-immobilized antibody (amphetamine specific antibody) is displaced by amphetamine in a sample and the displaced labeled tracer is detected which is directly proportional to amphetamine in the sample.

Wang et al., however, fail to disclose antibodies against the hapten conjugates and use of the antibody in competitive immunoassay methods as claimed in the present application.

Hui et al disclose haptens and immunogens that are useful in the production of antibodies and detection of amphetamine derivatives. Although not anticipated, the linkers of the hapten conjugates disclosed by Hui et al (page 5, structure II and paragraphs [0055-0057]); wherein Z= -L-X-Q and considering L=heteroatom and having a total of 1-6 carbon; X= -CO- and Q = as defined)) are similar to the linkers of compounds of claims of the instant invention.

Hui et al also disclose conjugate of the hapten for raising antibody against the immunogen ([0130]) and for using as a tracer. Hui et al also disclose methods/assays for detection and quantitative determination of amphetamine derivatives (paragraphs [0067], [0068], [0077], [0035], [0055] and claims 42-50). Hui et al further disclose reagent kit assembly for detection of amphetamine and methamphetamine in test samples such as biological fluids (paragraphs [0039], [0072], [0074], [0075] and [0076] and claims 31-34).

Therefore, given the fact that derivatives of amphetamine and methamphetamine conjugates are common and known in the art as a tracer and as an immunogen in various competitive immunoassay (Hui and Wang), it would have been obvious at the time of the invention to a person of ordinary skill in the art to obtain antibody against a hapten once a hapten conjugate is know (Wang) and to use the antibody in a competitive immunoassay (Wang and Hui), with the expectation of obtaining a similarly useful method for detection of amphetamine and methamphetamine in a sample.

The packaging of components in kit form (claim 60) is a well-known obvious expedient for ease and convenience in assay performance (e.g. Heiman) and once a method has been established, one skilled in the art would clearly consider compiling in a kit format and change/modify different components of the kit to best suit the assay.

Response to Argument

8. Applicant's arguments filed August 4, 2005 have been fully considered but they are not persuasive.

9. Applicant's amendments necessitated a new ground of rejection under 103 that renders applicant's arguments moot with respect to rejection under 35 USC 102 (paragraphs 12-15 of last office action).

10. Aplicant's argument with respect to "stereoisomer" is discussed in paragraph 5 of this office action.

Conclusion

11. Applicant's amendments necessitated a new ground of rejection under 103 and thus **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shafiqul Haq whose telephone number is 571-272-6103. The examiner can normally be reached on 7:30AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long V. Le can be reached on 571-272-0823. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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